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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/858,096	05/15/2001	Satoshi Deishi	15162/03630	2717

24367 7590 04/23/2003

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EXAMINER
AMINI, JAVID A

ART UNIT	PAPER NUMBER
2672	6

DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/858,096	DEISHI ET AL.	
	Examiner	Art Unit	
	Javid A Amini	2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-19 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-5,7-10 and 12-19 is/are rejected.

7)☐ Claim(s) 6 and 11 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 10, 12-15 and 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi.

1. Claim 1.

"A color correction method of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative of a range of reproducible colors, said color correction method comprising the steps of entering image data prepared for said first apparatus, and shifting said entered image data by a conversion of shifting a gray axis of said first Gamut towards a gray aids of said second Gamut, wherein said image data is shifted according to an amount of shifting corresponding to a distance from the gray axis of said first Gamut in a chroma direction", Yamaguchi illustrates in Fig. 1 color-reproducible ranges of various image inputting systems in a chromaticity diagram. Yamaguchi teaches in (col. 3, lines 9-13) the achromatic color on the achromatic color axis is shifted up to the white color as a lightness thereof is increased, and down to the black color as the lightness is decreased. Yamaguchi teaches in (col. 3, line 21-35) it is necessary to correct a color image data of the original image such that the color of the original image is shifted to a suitable color within the color-reproducible range (gamut) of the image

output medium in the chromaticity diagram (color space). In general, the original image data is corrected such that the color of the original image is shifted toward a point on the achromatic color axis and is located at a point within a color-reproducible of the image output medium. But Yamaguchi does not explicitly specify the gray axis. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

2. Claim 2.

"The color correction method according to claim 1, further comprising the steps of compressing the converted image data in directions of lightness and chroma so as to be applied to said second apparatus, pasting image data that does not come into said second Gamut even by said compression step to a surface of said second Gamut, and providing image data corrected through said pasting step outside", Yamaguchi teaches in (col. 2, lines 19-30) As another color-correcting technique is known a color compression technique (a data-compression transform technique). In the data-compression transform technique, an original color image data which is input from an image input medium such as a photographic film, a television, an ink-printed sheet or the like, is beforehand transformed into a recordable color image data which is compressed in an achromatic (neutral) color direction, and then a color image is recorded or reproduced on an image output medium such as a copy sheet, a television, a coated or non-coated sheet or the like on the basis of the compressed color image data. Yamaguchi does not explicitly specify pasting image data. It

would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

3. Claim 3.

"The color correction method according to claim 1; wherein said amount of shifting becomes smaller in proportion to greater distance from the gray axis of said first Gamut in the chroma direction", Yamaguchi illustrates in Fig. 1. Applicant needs to rewrite the language of this claim.

4. Claim 10.

"A color correction method of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative of a range of reproducible colors, said color correction method comprising the steps of entering image data prepared for said first apparatus, shifting said entered image data by a conversion of shifting a gray axis of said first Gamut towards a gray axis of said second Gamut, wherein said conversion is a conversion of shifting the gray axis of said first Gamut to a position not completely matching the gray axis of said second apparatus", Yamaguchi illustrates in Fig. 1 color-reproducible ranges of various image inputting systems in a chromaticity diagram. Yamaguchi teaches in (col. 3, lines 9-13) the achromatic color on the achromatic color axis is shifted up to the white color as a lightness thereof is increased, and down to the black color as the lightness is decreased. Yamaguchi teaches in (col. 3, line 21-35) it

is necessary to correct a color image data of the original image such that the color of the original image is shifted to a suitable color within the color-reproducible range (gamut) of the image output medium in the chromaticity diagram (color space). In general, the original image data is corrected such that the color of the original image is shifted toward a point on the achromatic color axis and is located at a point within a color-reproducible of the image output medium. But Yamaguchi does not explicitly specify the gray axis. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

5. Claim 12.

"The color correction method according to claim 10, wherein said shifting-step sets a-white point of said first Gamut to coincide with the white point of said second Gamut. A computer program causing a computer to execute a color correction process of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative of a range of reproducible colors, said color correction process comprising the steps of: receiving image data prepared for said first apparatus, and shifting said received image data by a conversion of shifting a gray axis of said first Gamut towards a gray axis of said second Gamut, wherein said image data is shifted according to an amount of shifting corresponding to a distance from the gray aids of said first Gamut in a chroma direction", Yamaguchi does not explicitly specify the white point, however, a

white point (color) matches another color (white point), Beretta teaches in (col. 5, lines 4-29) here are, however, many variables influencing color appearance not taken into account by automated color correction and metameric matching. Preserving certain relationships between colors and achieving consistent and appropriate colors in a document or image may be far more important to the user than a producing metamerically matching colors. But Yamaguchi does not explicitly specify the white point. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

6. Claim 13.

"A computer program causing a computer to execute a color correction process of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative of a range of reproducible colors, said color correction process comprising the steps of: receiving image data prepared for said first apparatus, and shifting said received image data by a conversion of shifting a gray axis of said first Gamut towards a gray axis of said second Gamut, wherein said image data is shifted according to an amount of shifting corresponding to a distance from the gray axis of said first Gamut in a chroma direction", Yamaguchi illustrates in Fig. 1 color-reproducible ranges of various image inputting systems in a chromaticity diagram. Yamaguchi teaches in (col. 3, lines 9-13) the achromatic color on the achromatic color axis is

shifted up to the white color as a lightness thereof is increased, and down to the black color as the lightness is decreased. Yamaguchi teaches in (col. 3, line 21-35) it is necessary to correct a color image data of the original image such that the color of the original image is shifted to a suitable color within the color-reproducible range (gamut) of the image output medium in the chromaticity diagram (color space). In general, the original image data is corrected such that the color of the original image is shifted toward a point on the achromatic color axis and is located at a point within a color-reproducible of the image output medium. But Yamaguchi does not explicitly specify the gray axis. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

7. Claim 14.

"A computer program causing a computer to execute a color correction process of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative, of a range of reproducible colors, said color correction process comprising the steps of receiving image data prepared for said first apparatus, and shifting said received image data by a conversion of shifting a gray axis of said first Gamut towards a gray axis of said second Gamut, wherein said conversion is a conversion of shifting the gray axis of said first Gamut to a position not completely matching the gray axis of said second apparatus", Yamaguchi illustrates in Fig. 1

color-reproducible ranges of various image inputting systems in a chromaticity diagram. Yamaguchi teaches in (col. 3, lines 9-13) the achromatic color on the achromatic color axis is shifted up to the white color as a lightness thereof is increased, and down to the black color as the lightness is decreased. Yamaguchi teaches in (col. 3, line 21-35) it is necessary to correct a color image data of the original image such that the color of the original image is shifted to a suitable color within the color-reproducible range (gamut) of the image output medium in the chromaticity diagram (color space). In general, the original image data is corrected such that the color of the original image is shifted toward a point on the achromatic color axis and is located at a point within a color-reproducible of the image output medium. But Yamaguchi does not explicitly specify the gray axis. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

8. Claim 15.

"A color correction method of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative of a range of reproducible colors, said color correction method comprising the steps of entering image data located in said first Gamut, data using a predetermined technique processing said entered image so as to be applied to said second apparatus, and compressing image data that does not come into said second Gamut by said

processing step using a predetermined technique so as to be located in said second Gamut such that color difference is minimized while maintaining lightness", Yamaguchi illustrates in Fig. 1 color-reproducible ranges of various image inputting systems in a chromaticity diagram. Yamaguchi teaches in (col. 3, lines 9-13) the achromatic color on the achromatic color axis is shifted up to the white color as a lightness thereof is increased, and down to the black color as the lightness is decreased. Yamaguchi teaches in (col. 3, line 21-35) it is necessary to correct a color image data of the original image such that the color of the original image is shifted to a suitable color within the color-reproducible range (gamut) of the image output medium in the chromaticity diagram (color space). In general, the original image data is corrected such that the color of the original image is shifted toward a point on the achromatic color axis and is located at a point within a color-reproducible of the image output medium. But Yamaguchi does not explicitly specify the gray axis. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

9. Claim 19.

"A computer program causing a computer to execute a color correction process of correcting image data prepared for a first apparatus having a first Gamut indicative of a range of reproducible colors so as to be applied to a second apparatus having a second Gamut indicative of a range of reproducible colors, said color correction process comprising the steps of: receiving

image data located in said first Gamut, processing said received image data using a predetermined technique so as to be applied to said second apparatus, and compressing image data that does not come into said second Gamut by said processing step using a predetermined technique so as to be located in. said second Gamut such that color difference is minimized while maintaining lightness", Yamaguchi illustrates in Fig. 1 color-reproducible ranges of various image inputting systems in a chromaticity diagram. Yamaguchi teaches in (col. 3, lines 9-13) the achromatic color on the achromatic color axis is shifted up to the white color as a lightness thereof is increased, and down to the black color as the lightness is decreased. Yamaguchi teaches in (col. 3, line 21-35) it is necessary to correct a color image data of the original image such that the color of the original image is shifted to a suitable color within the color-reproducible range (gamut) of the image output medium in the chromaticity diagram (color space). In general, the original image data is corrected such that the color of the original image is shifted toward a point on the achromatic color axis and is located at a point within a color-reproducible of the image output medium. But Yamaguchi does not explicitly specify the gray axis. It would have been obvious at the time invention was made to one of ordinary skill in the art to provide a reproduced color image having the same color as an original image even though a color-reproducible range of an image input medium is inconsistent with that of an image output medium, since it has been held under different observing environments such as illuminations, the same color as the original image can be visually observed in the recorded or reproduced color image.

Claims 4-5, 7 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi, and further in view of Beretta.

10. Claim 4.

"The color correction method according to claim 1, wherein said shifting step shifts said entered image data so that the gray axis of said first Gamut matches the gray axis of said second Gamut", Yamaguchi does not explicitly specify the gray axis, however, Beretta teaches in (col. 5, lines 4-29) here are, however, many variables influencing color appearance not taken into account by automated color correction and metameric matching. Preserving certain relationships between colors and achieving consistent and appropriate colors in a document or image may be far more important to the user than a producing metamerically matching colors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Beretta into Yamaguchi in order to provide the graphical user interface that makes explicit to users the relationship among colors in the palette of colors as they are being edited. In addition, it provides a facility for the user to manually control how a color will be reproduced in a given device gamut, on one or more output devices.

11. Claim 5.

"The color correction there according to claim 1, wherein said shifting step shifts said entered data so that the gray axis of said first Gamut is shifted to a position not completely matching the gray axis of said second Gamut", Yamaguchi does not explicitly specify the gray axis, Beretta teaches in (col. 52, lines 14-29) CIELAB space defined in cylindrical coordinates is particularly advantageous to use for gamut mismatch correction. Hue information may be preserved (i.e., kept constant) by correcting chromatic and lightness information along a constant hue angle. A color's lightness may be preserved by editing on the *, b* plane only, and clipping the chroma of any color that is invalid in the gamut for the specified lightness. Similarly, chromatic

information, defined on straight lines radiating from the center achromatic axis, may be processed separately and held constant while changing lightness (L*) to find the maximum lightness to support the desired chroma. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Beretta into Yamaguchi in order to provide the graphical user interface that makes explicit to users the relationship among colors in the palette of colors as they are being edited. In addition, it provides a facility for the user to manually control how a color will be reproduced in a given device gamut, on one or more output devices.

12. Claim 7.

"The color correction method according to claim 1, wherein said shifting step sets a white point of said first Gamut to coincide with the white point of said second Gamut", Yamaguchi does not explicitly specify the white point, however, a white point (color) matches another color (white point), Beretta teaches in (col. 5, lines 4-29) here are, however, many variables influencing color appearance not taken into account by automated color correction and metameric matching. Preserving certain relationships between colors and achieving consistent and appropriate colors in a document or image may be far more important to the user than a producing metamerically matching colors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Beretta into Yamaguchi in order to provide the graphical user interface that makes explicit to users the relationship among colors in the palette of colors as they are being edited. In addition, it provides a facility for the user to manually control how a color will be reproduced in a given device gamut, on one or more output devices.

13. Claim 16.

"The color correction method according to claim 15, wherein said predetermined technique includes the step of shifting said entered image data by a conversion of shifting a gray axis of said first Gamut towards a gray axis of said second Gamut", Yamaguchi does not explicitly specify the gray axis, Beretta teaches in (col. 5, lines 4-29) here are, however, many variables influencing color appearance not taken into account by automated color correction and metameric matching. Preserving certain relationships between colors and achieving consistent and appropriate colors in a document or image may be far more important to the user than a producing metamerically matching colors. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Beretta into Yamaguchi in order to provide the graphical user interface that makes explicit to users the relationship among colors in the palette of colors as they are being edited. In addition, it provides a facility for the user to manually control how a color will be reproduced in a given device gamut, on one or more output devices.

Allowable Subject Matter

14. Claims 6 and 11 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 8-9 and 17-18 recite the limitation "color space" in claims 8-9 and 17-18. There is insufficient antecedent basis for this limitation in the claim. Applicant should provide in detail parameters for color space.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Javid A Amini whose telephone number is 703-605-4248. The examiner can normally be reached on 8-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 703-305-4713. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-8705 for regular communications and 703-746-8705 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Javid A Amini
Examiner
Art Unit 2672

Javid Amini
April 17, 2003

MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
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